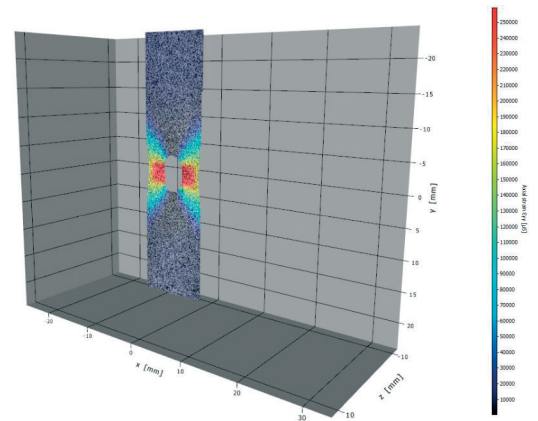


StrainMaster

Optical technology for
full-field strain measurement

Applications

- ▶ Tensile, compression and bend testing
- ▶ Material characterization
- ▶ Ultra-fast impact and blast
- ▶ High temperature
- ▶ Crack detection
- ▶ Granular flows
- ▶ Cyclic fatigue
- ▶ Sub-surface defects
- ▶ Fluid-Structure Interaction
- ▶ Vibration analysis
- ▶ Biological applications



StrainMaster Portable

Compact and flexible
2D and 3D DIC system

Features

- ▶ Multiple device control and fully synchronized recording
- ▶ Device Control Unit (DCU) for synchronization of devices
- ▶ Highly efficient pulsed illumination system
- ▶ Ultra-rigid and lightweight mounting system
- ▶ **DaVis** software on-board, complete control, analysis, and data management within one software package
- ▶ Live extensometer mode with option for strain-controlled testing
- ▶ Integrated A/D-converter to collect analog data from test devices
- ▶ Virtual strain gauge and extensometer
- ▶ Dedicated add-on for Python®, MATLAB®, and various export formats
- ▶ Lifetime email and phone support and software updates included



StrainMaster High-Speed DIC

LaVision's **StrainMaster High-Speed DIC** system is a fully integrated solution for your high-speed **Digital Image Correlation** requirements. Our high-speed DIC systems are based around the highly accurate PTU. This device allows you to control the high-speed cameras and other devices such as pulsed lighting and A/D-converter with exact synchronization. The image collection is driven from within the DaVis software platform where the user has total control over the acquisition configuration (including pre and post-triggering).

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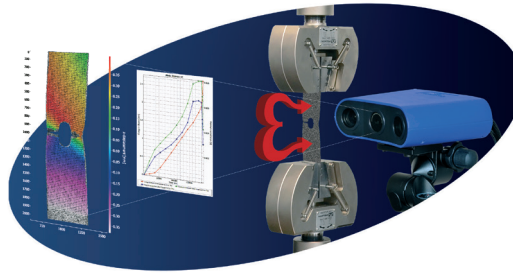
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StrainMaster Compact

Lightweight and compact
3D-DIC system

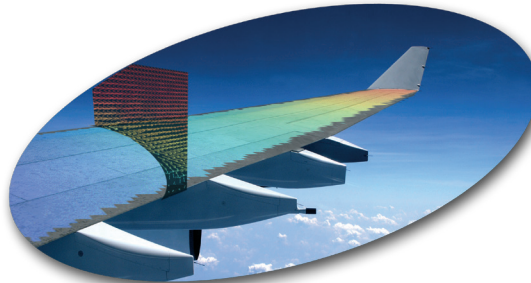
StrainMaster Compact is a lightweight, fully integrated and easy to use 3D-DIC system and provides a unique combination of highly accurate live video extensometer and 3D full field strain mapping. The single pre-calibrated measurement head contains two highly sensitive cameras together with the LED illumination, and includes features such as glare reduction technology. Together with the small form factor **Device Control Unit (DCU)**, the system enables strain-controlled testing and the ability to record analog data such as load from the test machine.



Fluid-Structure Interaction

Full-field experimental
measurement system

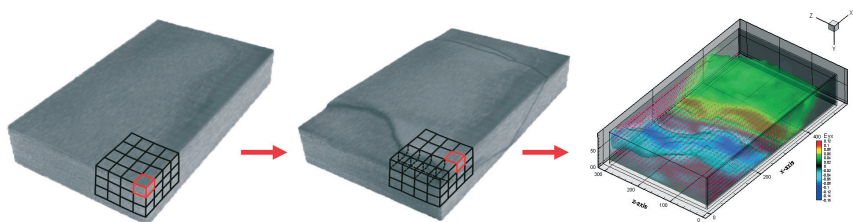
Fluid-Structure Interaction (FSI) is the study of fluid flow and the deformation which it causes to a surface or structure. The interaction between the fluid and structure may result in periodic or cyclic instabilities which can establish Flow Induced Vibrations (FIV). FSI effects are present in many different applications like flutter effects in aircrafts, heart valves and biomechanics, wind turbines, micro air vehicles, ships and yachts, etc. By coupling **Particle Image Velocimetry (PIV)** and **Digital Image Correlation (DIC)**, we are able to measure fluid-structure behavior allowing users to validate and optimize their simulations.



StrainMaster Digital Volume Correlation

Full volume material displacement
and strain measurements

StrainMaster Digital Volume Correlation (DVC) is a powerful extension of **DIC** and provides full volume 3D strain and displacement measurements. The material's natural or artificially introduced internal pattern is tracked between subsequent volumes, as illustrated below for the case of a "sand box" tectonic plate simulation. The obtained 3D full-field displacement and strain maps allow the user to truly understand the subsurface material behavior and validate complex simulations, and in the case below visualize the shear bands developing between the base and pop-up structure.



Tomographic strain analysis of 3D XCT analog experiment using Digital Volume Correlation (DVC), image courtesy of Dr. J. Adam, Department of Earth Sciences, Royal Holloway University of London

Data provided by LaVision are believed to be true.
However, no responsibility is assumed for
possible inaccuracies or omissions. All data are
subject to change without notice.

Sep-19

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